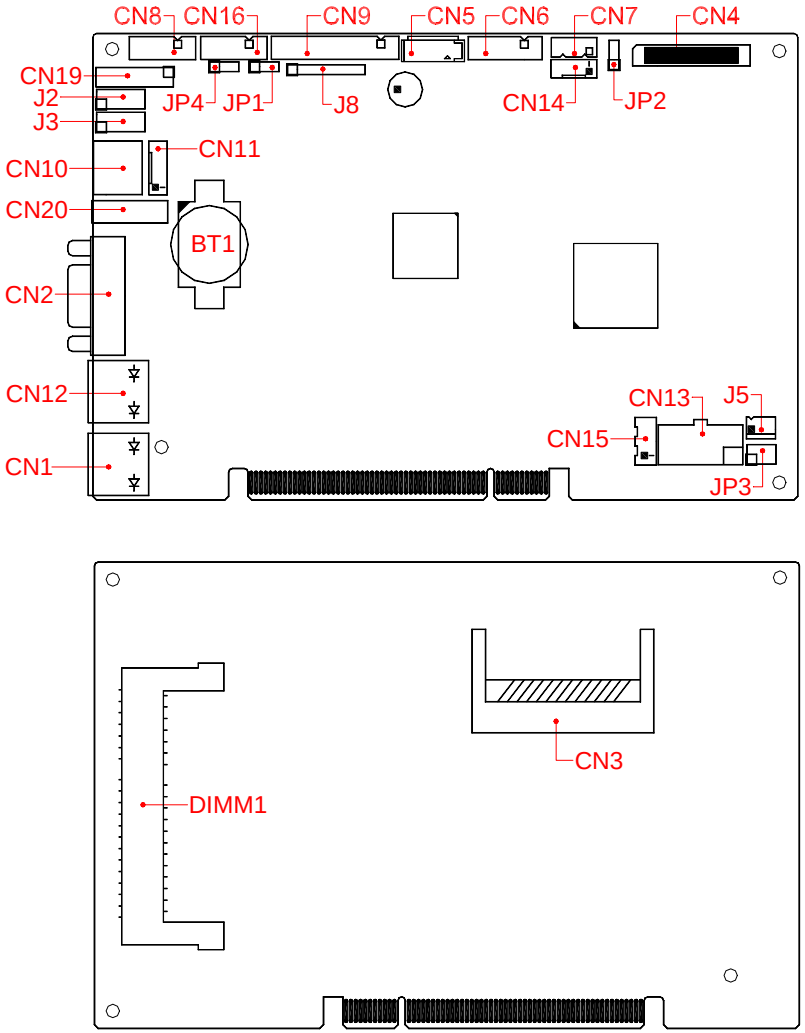
FB2648 Series User's Quick Setting

1. Brief

The FB2648 series is an all in one, PCI half-size CPU card with low power Intel® Atom N2600 processor. This user's quick setting provides the jumper and switch settings, connector location, and their pin assignment.

2. Board Placemen



3. Packing List

A. Standard Items

1 FB2648(x) all-in-one CPU board.
1 SATA hard disk drive interface cable.
2 serial port interface cable with bracket.
1 dual USB adapter cable with bracket.
1 compact disc includes this quick setup manual, user's manual, and software utilities.

B. Optional Items

1 Y-type (3-end) keyboard and mouse port adapter cable. (P/N: 7003000008G)
1 Audio with USB Kit (USB and Audio adapter board (FB4706) with 2 cables).

4. Features

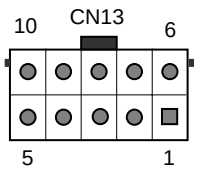
* On-board Intel® Atom N2600 CPU (1.6GHz, 1MB L2, 800MHz FSB, 3.5W) with fanless operation.
* Compact size slot card with Intel NM10 Express chipset and PCI expansion bus.
* Supports 1 SoDIMM socket for up to 2GB DDR3 RAM.
* Provides HD Audio function and Onboard VGA port supports CRT and LVDS interface.
* 1 SATA connector and 1 CFast socket.
* 2 GbE, 5 USB, 1 parallel, 1 RS-232, 1 RS-232/422/485, and PS/2 KB/MS interface ports.
* 8-line TTL I/O, On-board buzzer, and hardware monitoring functions.
* Software programmable watchdog timer and Flash BIOS with easy upgrade utility.
* Compact size, 185 mm x 122 mm.

5. Connectors and Jumpers List

Name	Function	Name	Function
CN1	LAN Connector (RJ45 w/LEDs)	J2	USB #1 & #2 Connector (J2*5)
CN2	VGA Connector (15-pin D-sub)	J3	USB #3 & #4 Connector (J2*5)
CN3	CFast Socket (24-pin)	J5	Cooling Fan Connector (3-pin Molex)
CN4	LVDS Connector (40-pin DF13)	J8	Reserved
CN5	7-pin SATA Connector		
CN6	HD Audio Connector (12-pin)	JP1	Clear CMOS Jumper (J1*3)
CN7	TTL I/O Connector (2*5-pin JST)	JP2	LCD Panel VCC Select (J1*3)
CN8	COM2 Connector (10-pin IDC)	JP3	AT/ATX Mode Select (J2*3)
CN9	Parallel Port Connector (26-pin IDC)	JP4	RS422/485 Terminator Select (J1*3)
CN10	PS/2 KB/MS Connector (6-pin mDIN)		
CN11	PS/2 KB/MS Connector (6-pin JST)	BUS1	PCI Bus (Golden Finger)
CN12	LAN Connector (RJ45 w/LEDs)	BZ1	On-board Buzzer
CN13	Mini ATX Power Connector (10-pin)	DIMM1	DDR3 So-DIMM Socket (204-pin)
CN14	LCD Power Connector (5-pin JST)	SW1	COM2 Mode Select (SW DIP-4)
CN15	ATX Signals Connector (4-pin JST)		
CN16	COM1 Connector (9-pin D-sub)		
CN19	Multi-Function Header (J2*6)		
CN20	USB #5 Connector (USB)		

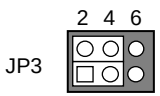
6. Connectors and Their Relative Jumpers

A. *Auxiliary Power Connector (CN13), ATX Power Signal Connectors and AT/ATX Select Jumper (CN15 and JP3)*



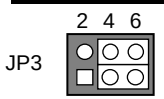
CN13	Signal	CN13	Signal
1	PSON#	6	VCCSB
2	Ground	7	+5V
3	Ground	8	+5V
4	+12V	9	-12V
5	+3.3V	10	Ground

Note 1: CN13 power connector is ideal for standalone applications.

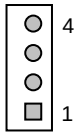


AT Mode

Factory Preset



ATX Mode



Pin 1: Ground
Pin 2: PSON#
Pin 3: N. C.
Pin 4: VCCSB

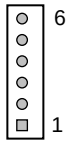
B. *SoDIMM Socket (DIMM1)*

DIMM1 (Located on the solder side) supports 204-pin, 1.5V, and DDR3 DRAM modules with size of 1GB and 2GB.

C. *Keyboard and Mouse Connectors (CN10 and CN11)*

CN10 is a standard PS/2 type keyboard connector and any PS/2 type keyboard can plug into CN10 directly without extra adapter cable. Use the keyboard+mouse adapter cable (optional), you can connect keyboard and mouse simultaneously. CN11 is another way to attach keyboard and mouse with optional adapter cable.

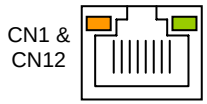
CN10



Pin 1: Mouse Data
Pin 2: Keyboard Data
Pin 3: Ground
Pin 4: VCC
Pin 5: Mouse Clock
Pin 6: Keyboard Clock

D. *LAN Connectors and LED Indicators (CN1 and CN12)*

CN1 and CN12 both are standard RJ45 connector with 2 LEDs. The orange LED indicates data is accessing and the green LED indicates on-line status. (When lighted indicates on-line and off indicates off-line)



(Front View)

CN1/CN12	10/100	Giga	CN1/CN12	10/100	Giga
1	TPTX+	MDI0+	5	FBG1	MDI2-
2	TPTX-	MDI0-	6	TPRX-	MDI1-
3	TPRX+	MDI1+	7	FBG2	MDI3+
4	FBG1	MDI2+	8	FBG2	MDI3-

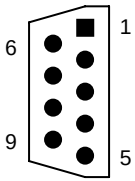
E. *Parallel Port Connector (CN9: 26-pin 2.0mm IDC)*

Use the printer port adapter cable (optional) to transfer 26-pin connector into standard parallel port connector (D-sub 25-pin).

F. *Serial Port Connectors & Selector (CN16, CN8, SW1, and JP4)*

There are 2 connectors, 1 switch, and 1 jumper that served for onboard 2 serial ports. The following table and figure list the combination and pin definition of them. Use the included serial cables for transferring 10-pin IDC to 9-pin D-sub connector. (Serial Port 2)

Functional connector, header, switch, and jumper of serial ports	COM1	COM2
RS-232 Signals	CN16	CN8
RS-422 Signals	-	CN8
RS-485 Signals	-	CN8
RS-422/485 Terminator Select	-	JP4
Mode Select	-	SW1



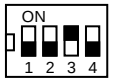
9-pin D-sub
(Front View)

CN16	Signals	D-sub 9	CN8	RS-232	RS-422	RS-485
1	-DCD1	1	1	-DCD2		-
6	-DSR1	6	2	-DSR2		-
2	RXD1	2	3	RXD2	RX-	485-
7	-RTS1	7	4	-RTS2	TX-	-
3	TXD1	3	5	TXD2	RX+	485+
8	-CTS1	8	6	-CTS2	TX+	-
4	-DTR1	4	7	-DTR2		-
9	-RI1	9	8	-RI2		-
5	Ground1	5	9	Ground2		
Metal	Case Ground	Metal	10	Case Ground		

SW1

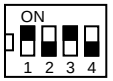
BIOS Setting
Factory Preset

SW1



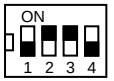
H/W Set to RS-232

SW1



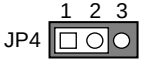
H/W Set to RS-422

SW1



H/W Set to RS-485

Terminator Resistor Select

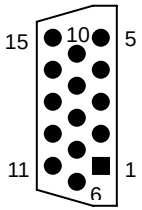


ON

OFF
Factory Preset

Note: SW1 is left empty. FB2648 do not support hardware settings in standard version.

G. *VGA Connector (CN2)*



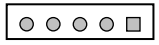
CN2 (Front View)

Pin 1: Red
Pin 2: Green
Pin 3: Blue
Pin 13: Hsync
Pin 14: Vsync
Pin 12: DDC Data
Pin 15: DDC Clock
Pin 5 & 10: Digital Ground
Pin 6,7,8: Analog Ground
Others: Not Used

H. LCD Connectors and Select Jumper (CN4, CN14, and JP2)

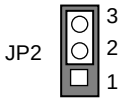
CN4	Signal	CN4	Signal
1	VDD	2	VDD
3	Ground	4	Ground
5	VDD	6	VDD
7	XDA0-	8	YDA0-
9	XDA0+	10	YDA0+
11	Ground	12	Ground
13	XDA1-	14	YDA1-
15	XDA1+	16	YDA1+
17	Ground	18	Ground
19	XDA2-	20	YDA2-
21	XDA2+	22	YDA2+
23	Ground	24	Ground
25	XCLK-	26	YDA3-
27	XCLK+	28	YDA3+
29	Ground	30	Ground
31	XDA3-	32	AUX-
33	XDA3+	34	AUX+
35	Ground	36	Ground
37	LDCC_CLK	38	N. C.
39	LDDC_DAT	40	EDPHPD

CN4 supports 18-bit LVDS LCD signals, and CN14 is the power connector for inverter board.

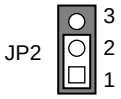


Pin 1: +12V
Pin 2: Ground
Pin 3: ENVDD
Pin 4: N.C.
Pin 5: +5V

LCD Panel Power Source Select



VDD = +3.3V
Factory Preset



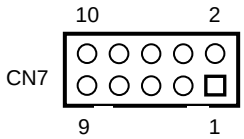
VDD = +5V

Note: If any trouble when connecting FB2648 with LCD panels, you could contact technical support division of FabiaTech Corporation.

I. SATA Connector and CFast Socket (CN5 and CN3)

Use the included 7-pin SATA cable, you can attach one SATA disk drive via CN5. CN3 is the CFast socket for CFast modules.

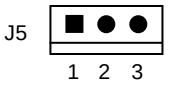
J. TTL I/O Connector (CN7: 2*5-pin 2.0mm JST)



CN7	TTL Lines	CN7	TTL Lines	Bit Location
1	GPIO 0	6	GPIO 5	Please refer to User's Manual for bit location details.
2	GPIO 1	7	GPIO 6	
3	GPIO 2	8	GPIO 7	
4	GPIO 3	9	Ground	
5	GPIO 4	10	Ground	

K. Cooling Fan Connector (J5)

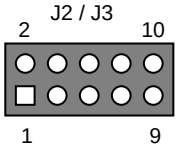
J5 is 3-pin Molex connector which is used to drive CPU cooling fan if necessary.



Pin1: Ground
Pin2: +12V
Pin3: Fan Speed

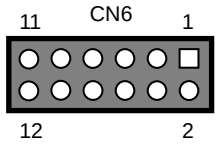
L. Audio and USB Connectors (CN6, J2, J3, and CN20)

CN20 is a standard USB connector. J2 and J3 support 2 port USB signals each. Use the included adapter cable connects to J2 or J3, you can attach up to 2 USB devices.

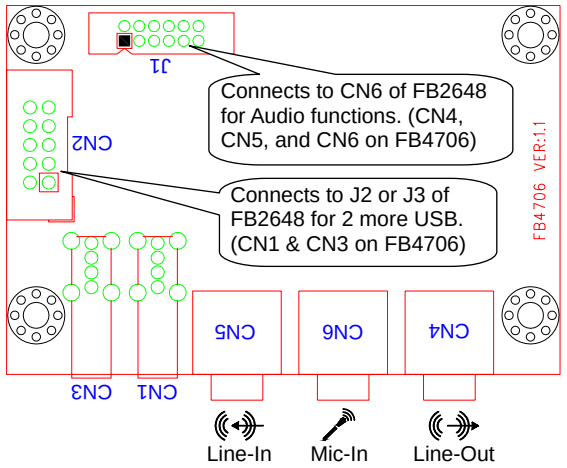


J2/J3	Signals	J2/J3	Signals
1	USBV0/USBV2	2	Case Ground
3	USBD0-/USBD2-	4	USBG1/USBG3
5	USBD0+/USBD2+	6	USBD1+/USBD3+
7	USBG0/USBG2	8	USBD1-/USBD3-
9	Case Ground	10	USBV1/USBV3

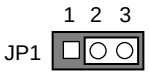
For Audio or 4 USB ports applications, an Audio with USB kit (optional) is necessary. The Audio with USB kit includes 1 FB4706 adapter board, one 12-pin Audio cable, and one 10-pin USB cable. The following figure shows CN6 signals, function connectors of FB4706 board, and how to connect cables between FB2648 with FB4706.



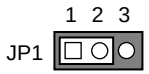
CN6	Signal	CN6	Signal
1	BITCLK	2	+12V
3	+5V	4	SYNC
5	Ground	6	Ground
7	+3.3V	8	ACRST#
9	SDOUT	10	N. C.
11	SDIN0	12	SDIN1



M. Clear CMOS Data (JP1)



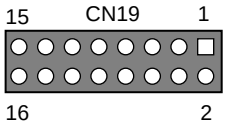
Normal Operation
Factory Preset



Clear CMOS

Note: Close pin 1 and 2 of JP1 at least 3 seconds, then return to normal operation position.

N. Multi-Fubction Header (CN19, Including Reset, External Speaker, and Indicating LEDs)



CN19	Function	CN19	Function
1	N. C.	2	N. C.
3	LAN1 Link/Act LED+	4	LAN1 Line/Act LED-
5	LAN2 Link/Act LED+	6	LAN2 Line/Act LED-
7	SATA LED+	8	SATA LED-
9	Power LED+	10	Power LED-
11	Speaker-	12	Speaker+
13	Reset-	14	Reset+
15	Power Button-	16	Power Button+

O. Main Extension BUS (BUS1: PICMG PCI)

FB2648x PCI BUS is designed to able to plug into a 5V PCI system slot. The I/O device board will not working if you plug FB2647x into PCI I/O slots.

End of Document